RESULTS

METHODS

Rats were stereotactically implanted with 14 silver electrodes (six active homolaterally on each hemisphere placed on the surface of the cortex in frontal, parietal and temporal regions). Seven days after surgery EEG recordings were performed using a 21 channel recording system Brainscope (Unimede). The first 10 min of EEG served as a baseline, subsequently the vehicle, ketamine or psilocin were administered and recording continued for another 40 minutes. Along with it active and quiet behavior was co-registered. The EEG signal was subsequently sequestered according to the registered behavior in WaveFinder v. 2.3. Finally a quantitative analysis in Neuroguide Software v. 2.6 software was performed to evaluate the effect on power spectra, EEG coherence and phase locking in delta (1-4 Hz), theta (4-8 Hz), alpha (8-12 Hz), beta (12-25 Hz), high beta (25-30 Hz) and gamma (30-40 Hz) bands.

RESULTS

A) the effects of ketamine and psilocin on EEG power spectra and connectivity in episodes of quiet behaviors

B) the effect of activity on EEG power spectra and connectivity measures

CONCLUSIONS

During quiet behavior both models induced specific changes in spectrum and connectivity. Common finding was a decrease in the connectivity. Behavioral activity of rats may confound EEG findings since it was associated with an increase in theta and alpha power and with increased coherence predominately. Our results are crucial for further animal studies on EEG and may contribute to the creation of animal guidelines for EEG recording and analysis with a translational impact for modelling psychoses.

This work is supported by projects IGA MHCR NR-8792-3, NR-8785-3, CNS MSMT100517, MZ 0PCP2005 and GACR 309/09/H072.